

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) An illumination apparatus, comprising:

a light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively,

light emission between the pair of electrodes being performed in the light emitting portion,

the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and

a second reflector arranged on a front side with respect to the light emitting portion,

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

a heat capacity of the front-side electrode of the pair of electrodes that is surrounded with the second reflector, being made larger than a heat capacity of the rear-side electrode.

2. (Previously Presented) The illumination apparatus according to claim 1, wherein

an end part of at least one of the pair of electrodes being held in touch with an inner surface of the light emitting tube.

3. (Previously Presented) An illumination apparatus, comprising:

a light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and

a second reflector arranged on a front side with respect to the light emitting portion,

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

the electrode shaft which supports the front-side electrode of the pair of electrodes that is surrounded with the second reflector being made thicker and/or longer than the electrode shaft which supports the rear-side electrode.

4. (Previously Presented) The illumination apparatus according to claim 3, wherein

an end part of at least one of the pair of electrodes being held in touch with an inner surface of the light emitting tube.

5. (Previously Presented) An illumination apparatus, comprising:

light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and

a second reflector arranged on a front side with respect to the light emitting portion,

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

the sealing portion located on the front side being made thicker than the sealing portion located on the rear side.

6. (Previously Presented) The illumination apparatus according to claim 5, wherein

an end part of at least one of the pair of electrodes being held in touch with an inner surface of the light emitting tube.

7. (Previously Presented) An illumination apparatus, comprising:

light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at

least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and

a second reflector arranged on a front side with respect to the light emitting portion,

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

the sealing portion located on the front side being coated with a heat radiation material which is higher in thermal conductivity than a material of the sealing portion.

8. (Previously Presented) The illumination apparatus according to claim 7, wherein

an end part of at least one of the pair of electrodes being held in touch with an inner surface of said light emitting tube.

9. (Previously Presented) An illumination apparatus, comprising:

light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and

a second reflector arranged on a front side with respect to the light emitting portion,

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

a wall thickness of the front side of the light emitting portion of the light emitting tube which is surrounded with the second reflector being greater than a wall thickness of a rear side of the light emitting portion.

10. (Previously Presented) The illumination apparatus according to claim 9, wherein

an end part of at least one of the pair of electrodes being held in touch with an inner surface of the light emitting tube.

11. (Previously Presented) An illumination apparatus, comprising:

light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and

a second reflector arranged on a front side with respect to the light emitting portion,

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

an end part of the front-side electrode of the pair of electrodes that is surrounded with the second reflector being held in touch with an inner surface of the light emitting tube.

12. (Previously Presented) An illumination apparatus, comprising:

light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and

a second reflector arranged on a front side with respect to the light emitting portion,

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion;

a pair of electrode shafts being respectively furnished with heat conduction parts at their end parts on sides on which they are connected with the pair of electrodes; and

a heat capacity of the heat conduction part of the front-side electrode of the pair of electrodes that is surrounded with the second reflector being made larger than a heat capacity of the heat conduction part of the rear-side electrode.

13. (Previously Presented) A projector, comprising:

an illumination apparatus;

an optical modulation device into which light from the illumination apparatus is entered and which modulates the entered light in accordance with given image information;

the illumination apparatus being an illumination apparatus further including:

light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube, and a second reflector arranged on a front side with respect to the light emitting portion;

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

a heat capacity of the front-side electrode of the pair of electrodes that is surrounded with the second reflector being made larger than a heat capacity of the rear-side electrode.

14. (Previously Presented) The projector according to claim 13, wherein an end part of at least one of the pair of electrodes being held in touch with an inner surface of the light emitting tube.

15. (Previously Presented) A projector, comprising:
an illumination apparatus; and
an optical modulation device into which light from the illumination apparatus is entered and which modulates the entered light in accordance with given image information;
the illumination apparatus being an illumination apparatus further including:
light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;
a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and a
second reflector arranged on a front side with respect to the light emitting portion;
the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

the electrode shaft which supports the front-side electrode of the pair of electrodes that is surrounded with the second reflector being made thicker and/or longer than the electrode shaft which supports the rear-side electrode.

16. (Previously Presented) The projector according to claim 15, wherein
an end part of at least one of the pair of electrodes being held in touch with an inner surface of the light emitting tube.

17. (Currently Amended) A ~~project~~projector, comprising:
an illumination apparatus; and
an optical modulation device into which light from the illumination apparatus is entered and which modulates the entered light in accordance with given image information;
the illumination apparatus is an illumination apparatus further including:
light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;
a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and
a second reflector arranged on a front side with respect to the light emitting portion;
the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

the sealing portion located on the front side being made thicker than the sealing portion located on the rear side.

18. (Previously Presented) The projector according to claim 17, wherein an end part of at least one of the pair of electrodes being held in touch with an inner surface of the light emitting tube.

19. (Previously Presented) A projector, comprising:
an illumination apparatus; and
an optical modulation device into which light from the illumination apparatus is entered and which modulates the entered light in accordance with given image information;

the illumination apparatus is an illumination apparatus further including:
light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and

a second reflector arranged on a front side with respect to the light emitting portion;

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

the sealing portion located on the front side being coated with a heat radiation material which is higher in thermal conductivity than a material of the sealing portion.

20. (Previously Presented) The projector according to claim 19, wherein an end part of at least one of the pair of electrodes being held in touch with an inner surface of the light emitting tube.

21. (Previously Presented) A projector, comprising:
an illumination apparatus; and
an optical modulation device into which light from the illumination apparatus is entered and which modulates the entered light in accordance with given image information;
the illumination apparatus is an illumination apparatus further including:

light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and

a second reflector arranged on a front side with respect to the light emitting portion;

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

a wall thickness of that front side of the light emitting portion of the light emitting tube which is surrounded with the second reflector being greater than a wall thickness of a rear side of the light emitting portion.

22. (Previously Presented) The projector according to claim 21, wherein an end part of at least one of the pair of electrodes being held in touch with an inner surface of the light emitting tube.

23. (Previously Presented) A projector, comprising:
an illumination apparatus; and
an optical modulation device into which light from the illumination apparatus is entered and which modulates the entered light in accordance with given image information;
the illumination apparatus is an illumination apparatus further including:

light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube;

a second reflector arranged on a front side with respect to the light emitting portion;

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion; and

an end part of the front-side electrode of the pair of electrodes that is surrounded with the second reflector being held in touch with an inner surface of the light emitting tube.

24. (Previously Presented) A projector, comprising:

an illumination apparatus; and

an optical modulation device into which light from the illumination apparatus is entered and which modulates the entered light in accordance with given image information;

the illumination apparatus is an illumination apparatus further including:

light emitting tube having a pair of electrodes, electrode shafts, leads, metal foils, a light emitting portion and sealing portions, electrode shafts supporting the corresponding electrodes, one end of the metal foils being connected with the corresponding electrode shafts, other end of the metal foils being connected with the corresponding leads, at least the metal foils being sealed in the sealing portions respectively, light emission between the pair of electrodes being performed in the light emitting portion, the light emitting portion being interposed between the sealing portions;

a first reflector arranged on a rear side with respect to the light emitting portion of the light emitting tube; and

a second reflector arranged on a front side with respect to the light emitting portion;

the second reflector being attached to the sealing portion located on the front side, so that its reflection surface may surround substantially a front half of the light emitting portion;

a pair of electrode shafts being respectively furnished with heat conduction parts at their end parts on sides on which they are connected with the pair of electrodes; and

a heat capacity of the heat conduction part of the front-side electrode of the pair of electrodes as is surrounded with the second reflector being made larger than a heat capacity of the heat conduction part of the rear-side electrode.